

different graphic elements, line art or images may be represented in the different grey scale region structure types.

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According to another aspect of the invention there is provided a device having a surface relief structure which has a regular array of regions, each region being smaller than 0.25 mm in width, wherein a large number of the regions are non-diffracting grey scale regions, each grey scale region having one or more graphic elements, line art or text images represented in microscopic size in its surface relief structure.

In some embodiments, each grey scale region may have an identical image represented in its surface relief structure. In other embodiments, each grey scale region may have a structure, which is one of a limited number of micrographic region structure types.

IN THE CLAIMS:

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Please delete Claims 19-27, 29, 30, 33 and 34 and substitute therefor the following clean copies of amended Claims 19-27, 29, 30, 33 and 34. A marked-up version of the amended claims, showing the amendments, is attached hereto.

CLEAN COPY OF CLAIMS

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19. (Twice Amended) A device having a surface relief structure which has a plurality of regions,
wherein the regions include gray scale regions, which are smaller than 0.25 mm in width,
each gray scale region having a structure selected from a predefined group of different non-diffracting grey scale region structure types, each structure type having physical characteristics which provide a particular level of diffuse scattering of incident light,
the different gray scale region types having, by reason of their differing diffuse scattering characteristics, different intensities when the device is illuminated by a light source and viewed by an observer from any direction.

20. (Amended) A device according to claim 19 wherein each non-diffracting grey scale region structure type has one or more graphic elements, line art or text images represented in microscopic size in its surface relief structure.

21. (Amended) A device according to claim 20 wherein each microscopic region is of size 120 micron by 120 micron or less.

22. (Amended) A device according to claim 20 wherein an image is represented in the physical characteristics of the physical characteristics of each non-diffracting grey scale region structure type, the image in each case being substantially the same but with differing diffuse scattering characteristics in differing non-diffracting grey scale region structure types.

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23. (Amended) A device according to claim 20, wherein different graphic elements, line art or images are represented in different non-diffracting grey scale region structure types.

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24. (Twice Amended) A device having a surface relief structure which has a regular array of regions, each region being smaller than 0.25 mm in width, wherein a large number of regions are non-diffracting grey scale regions with diffuse scattering characteristics, each grey scale region having one or more graphic elements, line art or text images presented in microscopic size in its surface relief structure so that each grey scale region appears to an observer to be a particular shade of gray when viewed from any direction.

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25. (Amended) A device according to claim 24 wherein each grey scale region has an identical image represented in its surface relief structure.

26. (Amended) A device according to claim 24 wherein each grey scale region has a structure which is selected from a predefined group of non-diffracting grey scale region structure types.

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27. (Amended) A device according to claim 24 wherein, when the device is illuminated by a light source and viewed by an observer, the observer sees in microscopic form an image which corresponds with a microscopic image represented in the surface relief structure of some or all of the grey scale regions.

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29. (Twice Amended) A device according to claim 28, wherein the non-diffracting grey scale regions provide a contrast enhancing dark background to the diffraction image or images.

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30. (Twice Amended) A device according to claim 28, wherein the non-diffracting grey scale regions provide gray scale enhancement to the diffraction image or images.

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33. (Twice Amended) A device having a surface relief structure which has a plurality of non-diffracting light scattering regions, each region having a number of non-periodic structures which scatter incident light in all different directions, so that the region appears to an observer to be a particular shade of gray when viewed from any direction.

34. (Thrice Amended) A valuable document having a surface which incorporates a device according to one of claims 19, 24 or 33, the surface having printed on it graphical elements which match up with, and are continuous with, graphical elements formed by the grey scale regions on the device.
